

POPULATION PROFILE, 2003

BROKEN ARROW, OKLAHOMA



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Table of Contents

| | | |
|------|--|---|
| I. | Introduction | 2 |
| II. | General statistics..... | 3 |
| III. | Population..... | 4 |
| A. | Persons Per Household | 4 |
| B. | Estimating Current Population (June, 2003) | 5 |
| C. | Future Population Estimates (City Limits)..... | 7 |
| D. | Income and Education | 8 |

I. INTRODUCTION

Broken Arrow is a suburban community just to the southeast of Tulsa, Oklahoma and is noted for low crime, good schools, quality development, and excellent transportation access to surrounding areas. These factors are primarily fueling the growth of the community. Additionally, the community still holds large undeveloped tracts of land adjacent to the Broken Arrow Expressway and new Broken Arrow South Loop turnpike, which offer prime sites for commercial, office, retail, and industrial development. These factors will continue to make Broken Arrow an attractive location for business and residential development.

Growing nearly 35% since 1990, Broken Arrow continues to be one of the fastest growing communities in Oklahoma of those with more than 50,000 persons. Between 1990 and 2000, the City of Broken Arrow added nearly 17,000 new residents, growing from 58,043 to 2000 population of 74,859 as reported by the US Census. In 1980 Broken Arrow was the 28th largest city in Oklahoma, in 1990 the 9th, and today the City ranks 5th. The estimated 2002 population was 81,900 and the June 2003 estimate is 83,513 for the incorporated area.

Population growth has also been accelerated due to the annexations that have occurred since 2000. Annexing areas containing existing subdivisions has the effect of adding a more substantial amount of population to the city limit's than would normally occur through natural growth and development. The city limit's of Broken Arrow has expanded nearly 5 square miles since 1990 and the fenceline by nearly 29 square miles. This continued rapid growth places new and increasing demands on the City's resources, land, environment, and capital infrastructure. Managing growth while at the same time maintaining a good quality of life is the primary challenge facing the community over the next 20 years.

II. GENERAL STATISTICS

Table 1 summarizes important population statistics about the community. The table suggests that while the population of the community continues to grow some changes within the population are taking place. The number of people per household continues to decline as it has for the past 30 years. The population is aging and is evident by the median age rising from 29.9 in 1990 to 33.33 in 2000 and more people as a percentage of total population in the 55 to 85 age cohorts in 2000 than in 1990. The increase in the number of females in 2000 from 1990 also indicates an aging population as females have a longer lifespan than males. In 1990 there were also more individuals in the 25 to 45 age cohorts as a percentage of total population than in 2000.

Table 1
Basic Statistical Data About Broken Arrow

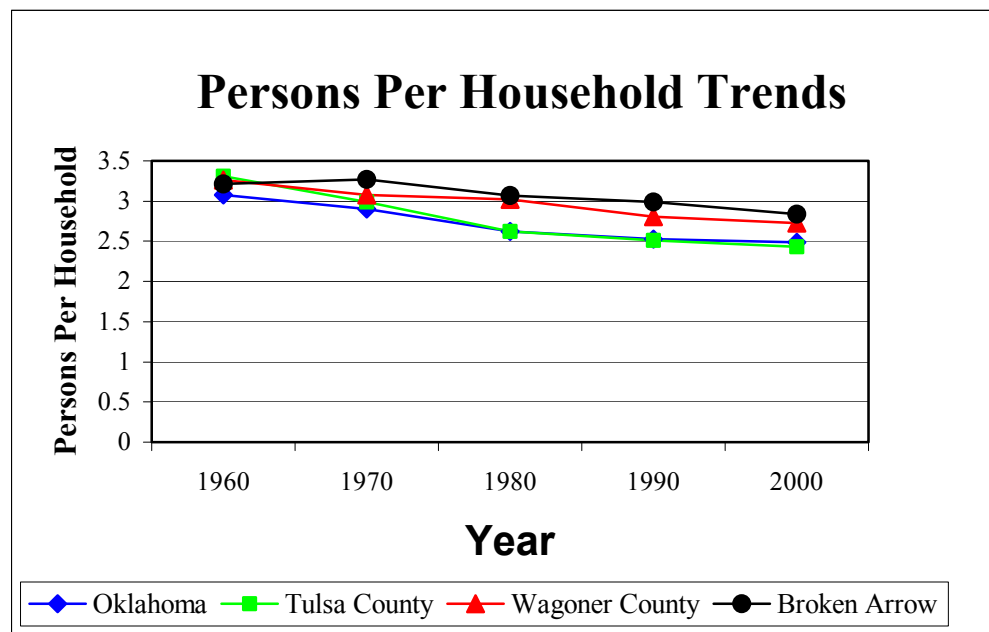
| Item | Data | | | | | |
|---|--|--------------------|------------------|------------|-------------|------------------|
| Land Area in Fenceline <i>(July 2003)</i> | Approx. 105 square miles | | | | | |
| Land Area in City Limits <i>(July 2003)</i> | Approx. 55.77 square miles | | | | | |
| April 2000 City Limit Population <i>(2000 Census)</i> | 74,859 | | | | | |
| Estimated June 2003 City Limit Population <i>(Using April 2000 Census, including new annexations plus 2000-2002 building permit data)</i> | 83,545 | | | | | |
| Estimated Population Added from New Construction Since April 2000 Census | 5,946 | | | | | |
| Estimated 2003 Fence Line Population <i>(Using April 2000 Census Pop.)</i> | 88,807 | | | | | |
| Population Estimate for 2020 <i>(Planning Department Estimate)</i> | 132,000 | | | | | |
| Percent Persons Residing Inside City Limits | 89% <i>(Fenceline area)</i> | | | | | |
| Median Age | 2000 Census: 33.33 1990 Census: 29.9 | | | | | |
| Age Cohorts <i>(2000 and 1990 Census data)</i> | 2000 Census | 1990 Census | | | | |
| | <u>Age</u> | <u>Pop.</u> | <u>% of Pop.</u> | <u>Age</u> | <u>Pop.</u> | <u>% of Pop.</u> |
| | 0 – 5 | 5,954 | 8% | 0 – 5 | 6,578 | 11% |
| | 5 – 15 | 13,168 | 18% | 5 – 15 | 11,172 | 19% |
| | 15 – 25 | 9,715 | 13% | 15 – 25 | 5,820 | 10% |
| | 25 – 35 | 10,590 | 14% | 25 – 35 | 11,581 | 20% |
| | 35 – 45 | 13,601 | 18% | 35 – 45 | 11,492 | 20% |
| | 45 – 55 | 10,939 | 15% | 45 – 55 | 5,234 | 9% |
| | 55 – 65 | 5,267 | 7% | 55 – 65 | 2,967 | 5% |
| | 65 – 75 | 3,248 | 4% | 65 – 75 | 1,931 | 3% |
| | 75 – 85 | 1,772 | 2% | 75 – 85 | 986 | 2% |
| 85+ | 605 | 1% | 85+ | 282 | 1% | |
| | Total | 74,859 | | Total | 58,043 | |
| Person per household average | 2000 Census: 2.84 1990 Census: 2.99 | | | | | |
| Gender (Percent of total population) | 2000 Census | 1990 Census | | | | |
| | Male 48.8% | Male 49.3 % | | | | |
| | Female 51.2% | Female 50.7% | | | | |
| Race | White 85.3% | | | | | |
| | Black 3.7% | | | | | |
| | Native American 4.0% | | | | | |
| | Hispanic 3.6% | | | | | |
| | Other 3.4% | | | | | |

III. POPULATION

A. Persons Per Household

Using a realistic person per household figure is important in estimating both present and future populations. The 2000 Census estimates 2.84 persons per household (owner and renter occupied) in Broken Arrow. In order to provide a regional comparison the person per household (PP/HH) data was collected for Tulsa County, Wagoner County, and the State of Oklahoma and plotted on a graph with the Broken Arrow data. Figure 1 indicates the general trend has been a reduction in PP/HH at all levels of geography analyzed, with the exception being a slight increase in the 1960 decade for Broken Arrow. The drop in persons per household is potentially attributed to two factors: the increase in single-parent households, and married couples having fewer children.

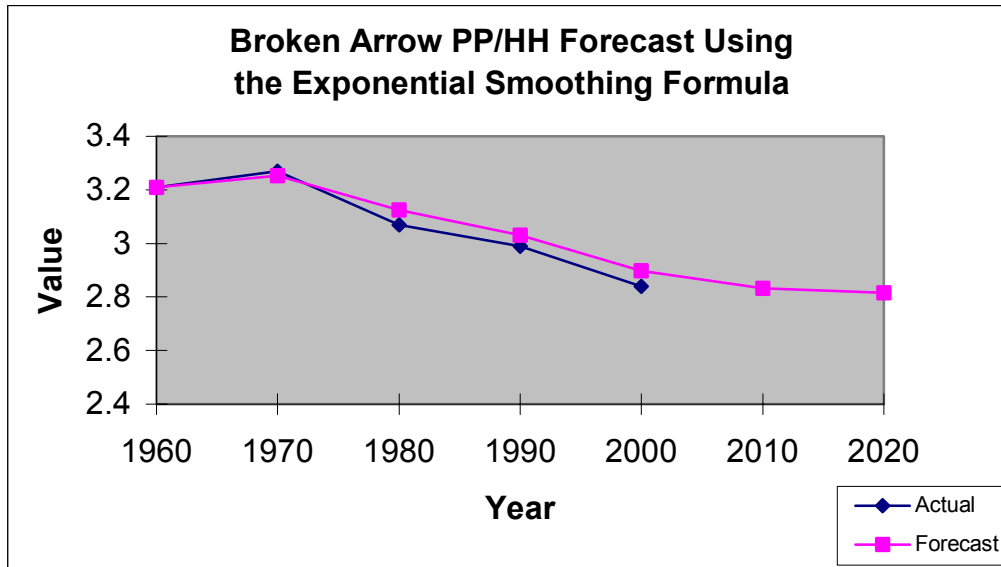
Figure 1



Source: US Census

The PP/HH showed a decreasing trend over the past 4 decades and it is important to consider this when developing population estimates or future plans. Using a technique called exponential smoothing, a projection can be made of PP/HH to the year 2020. This method is a statistical analysis that predicts a value based on the forecast for the prior period and adjusts for error in that prior forecast. Figure 2 shows the predicted values of PP/HH to the year 2020. As the chart indicates, PP/HH figures appear to level off and stabilize. In 2010 the PP/HH value is around 2.82 and in 2020 2.81. The analysis indicates that PP/HH in Broken Arrow will show only a slight decrease from the 2000 Census figure of 2.84.

Figure 2



B. Estimating Current Population (June, 2003)

In order to estimate the June 2002 city limit population, 2000 census data and residential building permit data were utilized. Since the Census data is recent, 2.84 PP/HH was used to estimate the current population for the City of Broken Arrow. When the census was taken in April 2000 many of the newly annexed areas were not included in the city limit population estimate. In order to gain an accurate estimate of city limit population, the City's Geographic Information System (GIS) was used to select the census block groups within the current (June 2002) city limit boundary. Using the 2000 Census data for Broken Arrow applied to the current June, 2002 City Limit boundary reveals an estimated population of **79,139**. This figure *does not* represent the number of residential units that have been built and occupied since April 2000.

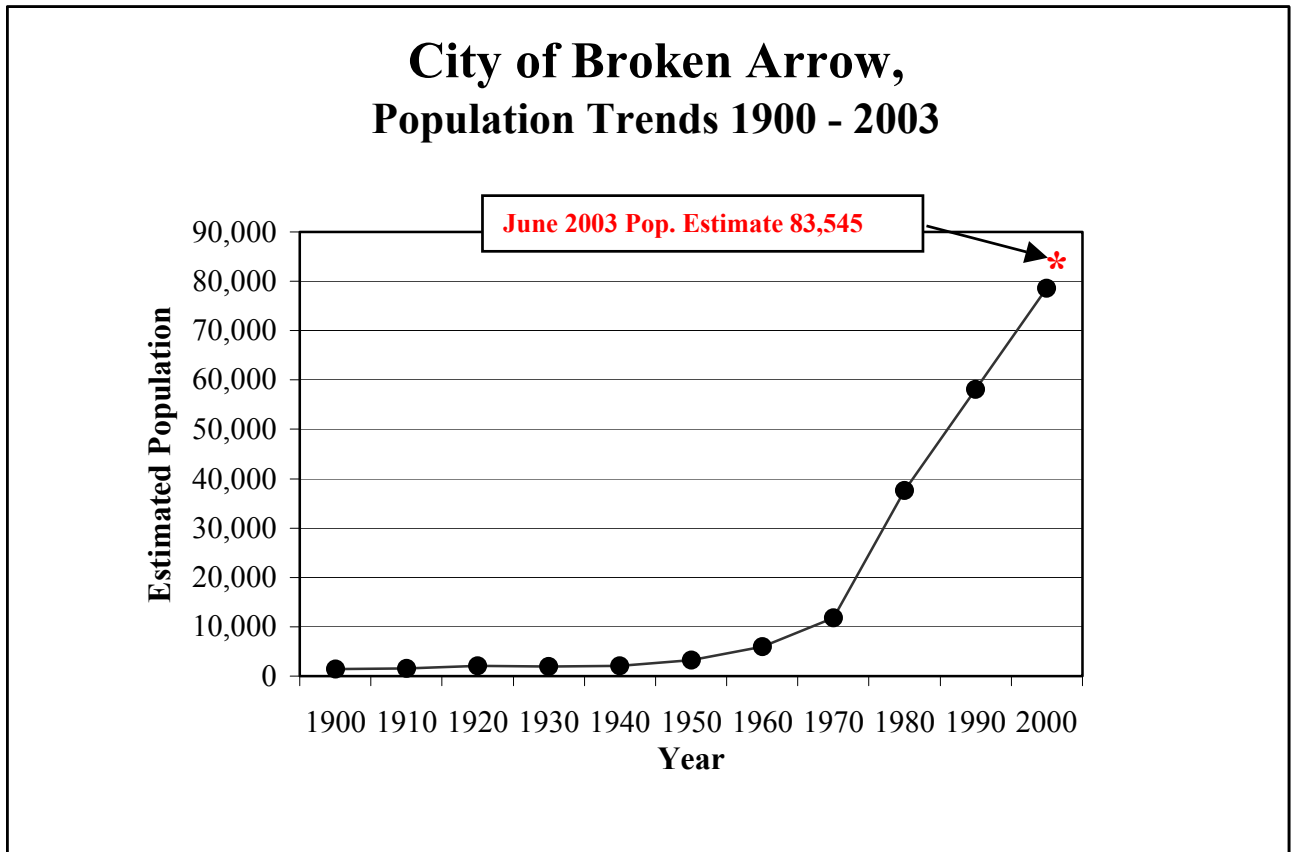
In order to obtain a current population estimate inclusive of new residents since April 2000, building permit data for part of 2000, all of 2001, and all of 2003 was utilized. For year 2000, permits issued between April 2000 (the cutoff date of the census) and December 2000 were used and for year 2001, permits for the entire year were used. The entire 2002 residential building permit data was used to construct the June 2003 estimate. Because there is generally a 6-month lag time from the time a permit is issued to the time the unit is occupied, the building permit data for 2003 (January through June) was not included in the current figure.

Between April and December 2000, 402 single-family and 120 multi-family units were permitted. In 2001 the city permitted 701 single-family and 372 multi-family units. The census data reveals that multi-family dwellings have 2.62 PP/HH, which is slightly less than 2.84 PP/HH for single-family dwellings. These figures were applied according to the dwelling units built for the described time periods to estimate a current June 2002 population. The June 2002 population estimate for the Broken Arrow City Limits based on the 2000 Census and new residential dwelling units is 83,978. This figure assumes that all the units are occupied. In order to refine the estimate, a vacancy rate of 2.0% was applied among all unit types to the building permit population estimate. Applying the vacancy rate reveals an estimated June 2002 population of 81,898 (81,900).

To determine the population for June 2003, building permit information was collected for 2002. In 2002 there were 580 single-family residential permits issued. Applying a 2% vacancy rate to this figure leaves 568 units that actually would be occupied. Applying the 2.84 person per household number to 568 gives an added 2002

population of 1,647. When this figure is added to the June 2002 estimate of 81,898 an **estimated population for the city limits in June 2003 of 83,545** is obtained. Figure 3 shows the population trend for Broken Arrow from 1900 to June 2003.

Figure 3

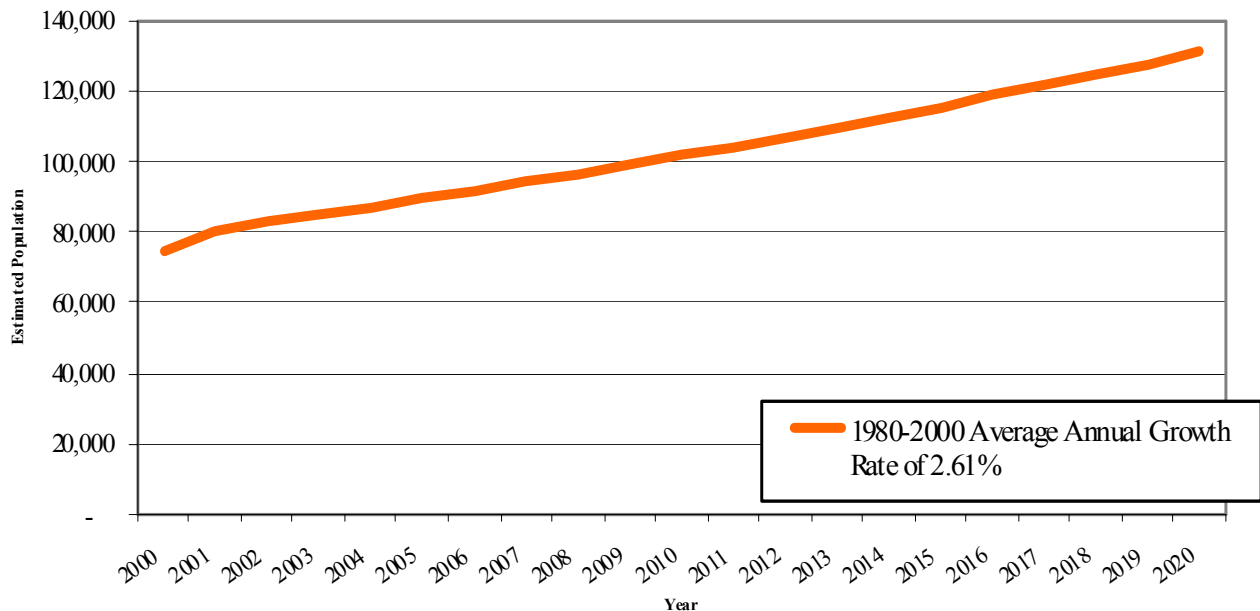


C. Future Population Estimates (City Limits)

In order to estimate future population it is important to have good historic data. Using past population average annual growth rates a trend can be established and projected in the future. While not as sophisticated as other forecast methods, the trend method provides a quick estimate of population at some future date. The 20-year growth rate between 1980 and 2000 was used to construct a population estimate for the year 2020. This period covers the “oil bust” years (mid 1980’s) in Oklahoma, which was a time of sluggish economic growth, and the better economic conditions of the mid and late 1990’s. The growth rate for the past 2 decades was used to construct a graph projecting a possible population to the year 2020. During the 20-year period from 1980 to 2000 the City grew at an average annual growth rate of 2.61%. Figure 4 shows this trend on a graph and indicates that Broken Arrow’s population could be around **132,000** by the year 2020.

Figure 4

City of Broken Arrow Future Population Estimates
Using 1980-2000 Average Annual Growth Rate



Projecting population is not a static event. Factors such as changes or volatility in the local economy, a major disaster, war, or lack of vacant land can substantially affect future population growth. The growth rate used in Figure 4 includes a period of economic sluggishness and one of prosperity. Because of this, the timeframe used for the prediction is more reflective of real conditions than one used for a shorter time period. The increased annexation of large tracts of land within the Broken Arrow fenceline is assumed to provide ample land in which to develop and thus will not slow growth below the rates seen in previous periods.

D. Income and Education

An analysis of the education and income data for Broken Arrow reveals that the per capita income is quite similar to Tulsa, but the median household income is significantly higher indicating that there are more married working couples and not as many young single professionals. Owner occupied housing is also significantly higher in Broken Arrow, largely due to the fewer number of apartments compared with Tulsa. Broken Arrow ranks ahead of Tulsa in all levels of educational attainment, with the exception of individuals with Professional and Doctorate Degrees. Tables 2 and 3 compare income and educational data between Tulsa and Broken Arrow.

Table 2

City of Tulsa and Broken Arrow Comparisons *Educational Attainment Expressed as a Percent of Total Population, 2000 Census*

| Category | City of Tulsa | City of Broken Arrow |
|------------------------|----------------------|-----------------------------|
| 12th Grade, No Diploma | 2.23% | 1.45% |
| Associate Degree | 4.09% | 5.77% |
| Bachelor's Degree | 12.29% | 13.92% |
| Master's Degree | 3.62% | 3.68% |
| Professional Degree | 1.71% | 0.91% |
| Doctorate Degree | 0.57% | 0.41% |

Source: 2000 Census Data, Indian Nations Council of Government

Prepared by Broken Arrow Planning Department, January 2003

Table 3

City of Tulsa and Broken Arrow Comparisons *Selected Socioeconomic Data, 2000 Census*

| Category | City of Tulsa | City of Broken Arrow |
|-----------------------------|----------------------|-----------------------------|
| Median Age | 34.4 | 33.3 |
| Families Below Poverty Rate | 10.90% | 3.40% |
| Per Capita Income | \$ 21,534 | \$ 21,555 |
| Median Household Income | \$ 35,316 | \$ 53,507 |
| Owner Occupied Housing | 56% | 78.7% |

Source: 2000 Census Data, Indian Nations Council of Government

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